Northwest Fisheries Science Center

The Harold W. Streeter: A Critical Research Vessel in the Pacific Northwest

A Few Streeter Facts

Length: 45'
Crew: 1 NOAA Corps Officer or U.S. Coast Guard licensed Master, up to 9 scientists
Year Built: 1962
Designer: Edwin Monk, Seattle, WA
Builder: Weldcraft, Bellingham, WA
Main Engine: Detroit Diesel 6-71; 150 horsepower
Cruising Speed: 9 knots
Fuel Capacity: 600 gallons
Freshwater capacity: 180 gallons
Environmental features: Oily-water separator removes oil from bilges before discharge

The *Harold W. Streeter* was built in 1962 to conduct water quality sampling on the Columbia and Willamette Rivers. Designed by Seattle naval architect Edwin Monk, the 45' *Streeter* is made from Douglas fir and oak. The National Oceanic and Atmospheric Administration's Northwest Fisheries Science Center acquired the *Streeter* in 1973 to study the impacts of pollutants on local fishery resources, protected species, and marine habitat.

Research Aboard the Streeter

The Northwest Fisheries Science Center (NWFSC or Center) conducts research to help conserve and manage living marine resources (e.g., salmon, groundfish, and killer whales) and their habitats in the Pacific Northwest. Each year, Center scientists spend more than 100 days aboard the *Streeter* collecting samples for critical research projects. These research projects range from studying the effects of chemical contaminants on flatfish to understanding how juvenile salmon use Puget Sound estuaries. Scientists aboard the *Streeter* collect samples using a variety of gear, including trawl nets, surface tow nets, sediment grabs, and CTDs (an instrument that simultaneously measures water temperature, salinity, and depth).

Streeter Sea Stories

Sometimes when the Streeter trawls for fish, it catches more than just fish. Center scientists have hauled up logs, tires, 50 gallon drums, plastic chairs, hard hats, sunglasses, abandoned gill nets and crab pots, a rickshaw bicycle, an Ernie puppet, and a high heel shoe.

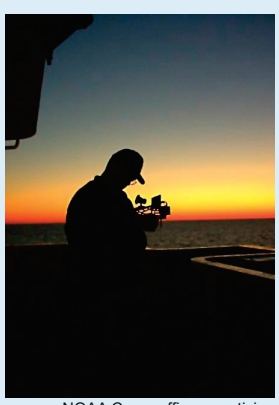
Haul of cement

In May of 2003, the *Streeter* crew found themselves in the middle of an emergency situation. Crew members were sampling juvenile salmon in Padilla Bay, WA when they spotted a low flying aircraft that moments later crashed into the water. The group immediately contacted the Coast Guard and launched the *Streeter's* small skiff for rescue. *Streeter* crew members were first to the scene of the incident; they pulled the pilot from the frigid water and later returned him safely to shore.

The NOAA Corps

The *Streeter* could not run without the NOAA Commissioned Officer Corps (NOAA Corps). The NOAA Corps was created in 1807 and is America's seventh (and smallest) uniformed service.

Today, the NOAA Corps consists of almost 300 officers that are trained in NOAA related fields, including engineering, earth sciences, oceanography, meteorology, and fisheries science. A typical officer's career is spent in a broad variety of NOAA assignments. NOAA Corps officers operate ships, fly aircraft, conduct diving operations, manage research projects, and serve in staff positions throughout NOAA.



NOAA Corps officer practicing celestial navigation

Scientitist in Kitimat, BC

Understanding Bacterial Kidney Disease

Bacterial kidney disease (BKD), which is caused by the bacterium *Renibacterium salmoninarum*, is one of the diseases that Center scientists study using fish collected during the *Streeter* townet project. BKD is a chronic debilitating disease, causes high mortality, and is characterized by lesions on the kidney and other organs. Center scientists are working to develop improved methods of diagnosis, control, and prevention of BKD.

Typical swollen "football" shape of juvenile salmon with BKD

Examining Remediation Efforts

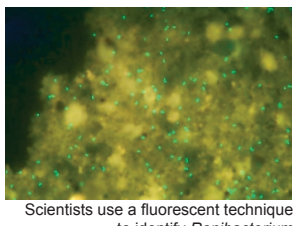
Center scientists aboard the *Streeter* collect fish and sediment samples in Kitimat, British Columbia as part of an on-going study to assess the impacts of polycyclic aromatic hydrocarbons (commonly found in gasoline and fuel oils) on marine life. These studies, conducted in cooperation with the Haisla First Nation, target both juvenile salmon and flatfish and are part of a long-term investigation to determine the efficacy of remediation efforts in the area.

The *Streeter* towing for juvenile salmon

Investigating Salmon in Estuaries

Center scientists aboard the *Streeter* conduct monthly sampling trips from February through October using surface trawl (townet) gear to collect juvenile salmon. This research is key to understanding how juvenile salmon use estuarine environments. With these samples, scientists can describe where and when juvenile salmon use different estuarine habitats and better understand their diet, growth rates, and disease prevalence.

Scientists processing a catch



Scientists use a fluorescent technique to identify *Renibacterium salmoninarum* cells

Monitoring the Health of Marine Organisms

Center scientists use the *Streeter* to continue monitoring marine organisms and their exposure to toxic chemicals at the Eagle Harbor Superfund site on Bainbridge Island, WA. Bottom sediments in much of Eagle Harbor were contaminated with chemicals from wood-treating and shipyard operations. As part of the clean-up, a sediment cap was placed over approximately 70 acres of harbor sediments to limit exposure of marine organisms to toxic chemicals. Through the Center's studies, scientists found that liver lesions in English sole (a flatfish) dropped significantly since the sediment capping was completed.

Healthy liver (left)
Liver with lesions (right)